

**Title 10—DEPARTMENT OF NATURAL RESOURCES**  
**DIVISION 20—Clean Water Commission**  
**Chapter 6—Permits**

**ORDER OF RULEMAKING**

By the authority vested in the Secretary of State under section 536.023, RSMo 2007, the secretary adopts a rule as follows:

10 CSR 20— 8.300 is adopted

A notice of proposed rulemaking containing the text of the proposed rule was published in the *Missouri Register* on August 15, 2011 (36 MoReg 1927-1937). Those sections with changes are reprinted here. This proposed rule becomes effective thirty (30) days after publication in the *Code of State Regulations*.

**SUMMARY OF COMMENTS:** A public hearing on this proposed rule amendment was held November 2, 2011. The public comment period ended November 16, 2011. The Department of Natural Resources indicated that no comments were made on the proposed amendment at the public hearing and fifty-four (54) comments pertaining to the rule were received via e-mail or letter.

**COMMENT #1:** Missouri Coalition for the Environment (MCE) - We propose that instead of the 500 year (0.2%), 100 year (1%), or 25 year (25%) floodplain, the alluvial soils map is used to determine flood potential. Unlike the floodplains as delineated by the FIRM's this delineation does not take into account levees, which should not be used to justify exempting CAFOs from this improved regulation. Since levees breach on a regular basis across our state during flood years, and since flood years seem to be getting more and more frequent, it seems only prudent to require that any manure storage be protected to at least the 100-year level, regardless of whether or not it is behind a levee. This will greatly reduce the risk that the damages caused by a levee breach will be compounded by flooded and failing manure storage structures. The alluvial soils map largely coincides with the 100-year flood level, represents areas that have been historically inundated (hence the alluvium), and is available statewide, unlike the DFIRM maps, which are only available for a portion of the counties in Missouri.

**RESPONSE:** No change was made as a result of this comment. The current rule condition that all CAFOs be protected from damage or inundation from the 100-year flood event is reasonable, practical and protective. Using the 100-year flood level is an accepted industry practice and is routinely used within government agencies as a regulatory standard.

**COMMENT #2:** MCE - We propose that all operations in the alluvial plane should at least be required to meet the 100 year flood level and that all operations be modified or rebuilt to meet the new, common sense, stormwater requirements for uncovered lagoons, by the time of their next permit renewal. All CAFOs located in the floodplains should have protections to 500 year levels since they store such incredibly toxic sludge that has the potential to spread disease during flood periods when people are at a higher risk for exposure to polluted surface waters. 150 out of 19095 permitted CAFOs are located in the Alluvial plane, which is more or less synonymous with the 100 year floodplain in Missouri. The 150 operations supposedly account for 88651 animal units according to NPDES shape files acquired from DNR earlier this year. It is very important that these operations be retro-fitted to meet 100-year protections as soon as possible, regardless of whether they are expanding their operation. The fact remains that they are a significant public health hazard in terms of spreading anti-biotic resistant bacteria and other pathogens to human populations, especially during flood conditions.

RESPONSE: No change was made as a result of this comment. This comment contains unverifiable statements to which we are unable to respond. This comment contains inaccurate data, particular as it relates to the number of CAFOs, that is not supported by department data and records. The requirements in this new rule will only apply to new and expanding CAFOs. The suggestion made in this comment that existing CAFOs currently operating in the floodplain be expected to comply with an increased flood protection level is not practical. Very few CAFOs exist in the floodplain and in 2011, during a record high flood year, the department is only aware of one CAFO that was affected by flood waters. This CAFO was on the Mississippi River and was impacted when the levee was intentionally breached by the US Army Corp of Engineers. The current rule condition that all CAFOs be protected from damage or inundation from the 100 year flood event is reasonable, practical and protective. Using the 100-year flood level is an accepted industry practice and is routinely used within government agencies as a regulatory standard.

COMMENT #3: MCE - The proposed improvements should apply to all operations large enough to have to build a waste lagoon, regardless of the reported total animal units, which may be misreported or kept just below the 1000 AU threshold to avoid permit requirements. This rule should be applied to all manure storage facilities, lagoons, etc. regardless of the reported number of animal units. Isn't the value of cleaning up Missouri's water from concentrated waste storage operations worth more than \$25,000/yr? According to this RIR the rule has been crafted to provide "the least costly and intrusive methods, while still providing increased consistency, efficiency, and environmental protection in the regulation of CAFOs." This seems to mean that we have chosen the cheapest possible method for protecting against the impacts of CAFOs, not the best method, the cheapest. The fiscal note for this comes to a whopping \$24,050/yr. This rule does not address the operations currently responsible for water quality and quality of life issues across our state that are not planning on expanding, apparently assuming that these operations do not pose a significant threat to the environment. The proposed improvements should apply to all operations large enough to have to build a waste lagoon, regardless of the reported total animal units, which may be misreported or kept just below the 1000 AU threshold to avoid permit requirements. Nor does this rule address operations that are purposefully operating just below the 1000 animal unit threshold to avoid these common sense rules and other protections that come through an NPDES permitting process. Despite the fact that a hog operation with 2400 finishing hogs produces an amount of fecal waste equivalent to that produced by a city of 24,000 humans, this operation would be able to get by without a permit thanks to our inadequate and imbalanced regulation of these operations. So while public citizens are paying a lot to maintain water quality their investments in waste treatment are being undermined by these operations that take on very little responsibility for the waste they are managing. While, by the most recent data available, it appears that there are 1095 permitted CAFOs in Missouri, the NRCS reports that there were 108,000 operations raising some kind of livestock in Missouri. Surely many of these are small farms, but many are operations that have been designed to skirt the regulations and these should be weeded out and required to get permits. Through our extensive work on CAFO issues in Missouri we have found many instances where facilities have purposefully mis-reported their AU totals, this should be ameliorated by requiring they submit a bill of sale or receipt accounting for every rotation of animals being confined and fed in their operation. This should be a requirement. All operations should be required to have a state operating permit if for no other reason than to allow for a tally of animals by location to be kept for all prudent water quality and environmental quality data to be assessed when making decisions.

RESPONSE: No change was made as a result of this comment. The requirements in this new rule will only apply to new and expanding CAFOs. This comment contains several unverifiable to which we are unable to respond. While existing CAFOs are not subject to this new rule, all CAFOs in Missouri have undergone an engineering and construction permit review by the department in the past. The remaining portion of this comment is beyond the scope of this rulemaking. Statutory provisions found in state law at

640.710 RSMo limits department regulatory and permit authority to Class I CAFOs (greater than 1,000 animal units) only.

COMMENT #4: MCE - The department should explain why these operations can't be required to meet the same consistent standards as a new operation would be held to, despite the fact that they are just as risky and dangerous to public health and new or expanded operations. One of the major reasons to get an NPDES permit is to use technology and improved methods to eliminate pollution in our waters, the permit renewal process is designed to allow for operations to be brought into compliance with current regulations. This is the regulatory process prescribed by the Clean Water Act, and although Federal Regulations may not always make sense, this process is perfectly reasonable and is necessary for us to gradually bring the extensive water pollution in Missouri under control and to give nature a chance to coincide with our social and economic goals.

RESPONSE: No change was made as a result of this comment. This comment contains several anecdotal statements for which we are unable to respond to. The requirements in this new rule will only apply to new and expanding CAFOs. Please reference the response to the related comments above. In addition, it is important to point out that EPA's New Source Performance Standard (NSPS) for CAFOs in 40 CFR 412, which was adopted in the 2008 EPA rule, apply only to new sources (new CAFOs), not to existing operations.

COMMENT #5: MCE - The regulation title should be amended to address instead storage design regulations for "animal waste, litter and process wastewater" Use of only the term 'manure' means that other relevant wastes that are supposed to be regulated [such as process wastewater, feed spoiled or rejected, etc.] become candidates for applicability exclusion when they should be determinately included under EPA regulations.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. The scope and purpose of this rulemaking is to set forth specific design criteria for manure management and storage along with setting guidelines for preparing and submitting a construction permit application for a concentrated animal feeding operation.

COMMENT #6: MCE - The Strawman (SM) 8.300 draft regulation is completely silent on silage leachate, which is a significant water pollution problem. Silage leachate can contain high BOD5, COD, ammonia, phosphorus and poses serious waste management and water quality concerns. Silage leachate can be intermingled with animal waste in storage lagoons, but it should not be permitted for uncontrolled discharge to surface waters. In addition, silage leachate can also discharge to groundwater from leaking silage bunkers and other silage storage. The rule language should be amended to ensure that all animal waste, litter and particularly the 'process wastewater' as defined in the federal regulation \*at 40 C.F.R. §123(b)(7). MDNR's existing 6.300 regulations on the definition of 'process wastewater' is close to or the same as the federal definition. In the present SM version of draft 6.300 regulations, MDNR is seeking a major change to this definition by dropping the phrase: "'Process wastewater' also includes any water which comes into contact with any raw materials, products, or byproducts including manure, litter, feed, milk, eggs, or bedding" that is present in both the federal and current state definition. Dropping that phrase means that silage leachate, off-specification milk, eggs washing water, leachate from feed rejects and other wastes will no longer be clearly required for regulation. It would further mean that the proposed "manure storage" regulations would not apply to storage and management of these wastes.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. The design of silage leachate collection systems was not a component of this rulemaking effort.

COMMENT #7: MCE - The definition of “rainfall minus evaporation” should instead be for “net precipitation. The calculation method for net precipitation and the web location of the NWS atlas should appear, either in the regulation or as a footnote. The definition should be amended in a manner that allows the source determination of net precipitation to be checked and verified against known, identified and published calculation methods and data sources as referenced. The present proposal does not provide a clear, specific and enforceable method to determine net precipitation.

RESPONSE: No change was made as a result of this comment. The term “rainfall minus evaporation” has been long used in Missouri for CAFOs; no change to this term is necessary. The definition in the proposed rule references the National Weather Service Climate Atlas as a source.

COMMENT #8: MCE - Definition (1)(B)(3) The definition of ‘freeboard’ is highly unusual. Freeboard is usually defined as the distance between the top surface of the aqueous waste and the level at which a waste storage lagoon will either overtop the berm or the level of the spillway, whichever is lower. Since spillways are to be required (See section (7)(F) of draft reg on p. 8), ‘freeboard’ should be defined as the distance between the level of aqueous waste being stored and the level of the required spillway. It does not make any sense to define freeboard in the manner proposed.

RESPONSE: No change was made as a result of this comment. The term “freeboard” and its definition in the proposed rule has been used this manner for CAFOs in Missouri for a while. No change to this term or definition is necessary.

COMMENT #9: MCE - The definition of ‘manure’ in the SM8.300 reg attempts to refer back to the 6.300(1)(B) regulations, but there is no definition of ‘manure’ provided in either the current or the SM versions.

RESPONSE: No change was made as a result of this comment. The reference to 6.300(1)(B) in this definition refers to the two terms “dry process waste” and “process wastewater” which are defined in the 6.300 rule.

COMMENT #10: MCE - The Missouri CAFO Nutrient Management Technical Standard (NMTS) is not a Missouri administrative rule, but should be in order to have enforceable rule effectiveness. CAFO operators must be under a duty to ensure that their nutrient management plans comply with the technical standard and that any such NMP ensures appropriate agricultural utilization of applied nutrients. I do not understand how the present non-rule NMTS can have that binding effect.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. This is only a definition of a term and not a rule condition or requirement. The requirements and conditions established for the NMTS are found in 10 CSR 20-6.300.

COMMENT #11: MCE - Definition (1)(B)(7) The definition of “Solid Manure” seems to mean that material that can be stacked without free liquids *at the time of stacking* since such materials will pass free liquids once impacted by incident precipitation if it is stored uncovered outdoors. See additional discussion on the Section (10) language on temporary stockpiling of solid manure. Water that comes into contact with a stack of solid manure should be considered process wastewater that must be land applied according to NMP requirements.

RESPONSE: No change was made as a result of this comment. The department believes the definition is sufficiently clear as proposed. The definition does not state anything about “at the time of stacking”.

COMMENT #12: MCE - The ten-year, ten day storm definition seems to lack the concept that the precipitation event must be considered the maximum event based on the amount of precipitation expected to occur. 'Geographical region' is not defined and is not clear. Citations to web URL locations to easily obtain this NWS product should be provided in footnotes or guidance.

RESPONSE: No change was made as a result of this comment. The department believes the definition is sufficiently clear as proposed.

COMMENT #13: MCE - General - NMPs. The physical facilities of waste management systems are traditionally indicated as NMP components, but the new waste regulations seem to provide new requirements which do not see waste storage facilities as part of the NMP for an individual CAFO site.

RESPONSE: No change was made as a result of this comment. The primary requirements for an NMP are found in 10 CSR 20-6.300 which address the production area.

COMMENT #14: MCE - "General" (2)(A) SM8.300 draft reg contains the following passage: "The manure storage design regulations shall be utilized by all Animal Feeding Operations which need or desire permit coverage. These regulations shall be used when evaluating all new AFOs or new or expanded components of existing AFOs after [Month Day Year (effective date of this regulation)]" This discussion in the "general" section is exceedingly unclear about what regulatory requirements are to be imposed, how such provisions are tied to other requirements in the rule proposal, who is being regulated and for what purpose is the regulation occurring. These are not academic concerns. From the text above it is not clear how or whether the rule have binding effect on what a CAFO owner operation does and what is the role of MDNR in enforcing the requirements. While the first clause claims to require that the regulations 'shall be utilized' by an AFO operator who are required to be permitted, what is missing is how AFO operators who have never previously complied with requirements under the rule will be required to come into compliance and by what date. The rule should be specifically amended to address this problem and to clarify that existing facility must bring waste management units into compliance. These provisions should be redrafted to specifically address rule applicability, the binding effect of the rule on AFOs and to eliminate vague language like "shall be utilized" that clouds applicability determinations.

RESPONSE AND EXPLANATION OF CHANGE: The department has revised the proposed rule to better explain and clarify its applicability and purpose. The sections that have been revised include the "purpose" statement, section (2)(A) and section (2)(E).

COMMENT #15: MCE - Permit Apps. Nothing in this entire section explains the relationship between criteria and standards in this section, and application content requirements, and all of the other sections of the draft document. At the very least, permit application content requirements should be incorporated that are tied to these other sections of the rule. The applicant's submitted documents must be required to show how an applicant will comply with all of the applicable requirements.

RESPONSE: No change was made as a result of this comment. It is unclear exactly what the commenter is requesting in this comment. The proposed rule sufficiently provides the needed guidelines for preparing and submitting a permit application that will demonstrate compliance with the technical requirements. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #16: MCE - Permit Apps (3)(A) The statement is made: 4 "The department will not examine the adequacy or efficiency of the structural or mechanical components of the waste management systems." Although the preamble of this section indicates the applications are subject to approval, the

quoted statement above appears to have the effect of MDNR eschewing all authority to determine the adequacy under the rule of what is contained in the engineering report section of an applicant's submittal. Taken literally, the statement might even be interpreted as an MDNR abdication from decision-making to disapprove demonstrably deficient applications.

RESPONSE: No change was made as a result of this comment. The department disagrees with the commenter's interpretation. The department does not review or provide approval to structural or mechanical components of a proposed waste or wastewater system. This would include the structural engineering plans for a building or foundation, electrical plans and the appropriateness, selection or efficiency of mechanical pumps, motors and the like. The department is not staffed with electrical, mechanical, or structural engineers and reviewing this type of information without the required level of expertise is not appropriate. However, neither is it necessary as this is the responsibility of the applicants consulting Professional Engineer. The department reviews the process design which would include ensuring design system capacities, days of storage, and nutrient management practices.

COMMENT #17: MCE - Apps (3)(A)(1)(F). This section contemplates submitted application which do not meet the design criteria as contained in the rule, but never explains how or why such deviations should be allowed and under what statutory basis the design exception is being taken. Subprovision VI under this section should be specifically modified to bar the disposal of domestic sewage in CAFO process wastewater disposal systems.

RESPONSE: No change was made as a result of this comment. The department has authority and discretion to set design standards and allow deviations when sufficiently justified.

COMMENT #18: MCE - General (3). The provisions of section (3) on applications should be revised and evaluated so that provisions of the draft rules at section 5-14 having physical elements and standard requirements are properly reflected and wholly subsumed within the application requirement provisions of section (3). Presently, it is not clear that all of the provisions at sections 5-14 will necessarily be comprehensively and completely represented in section (3) permit application submittals.

RESPONSE: No change was made as a result of this comment. It is not reasonable or practical to expect that all aspects of every design will be described in this rule. The proposed rule sufficiently characterizes what is needed in permit applications. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #19: MCE - Apps Engineering Nothing here in section (3)(A) clearly connects requirements on the contents of applications to the requirements, standards and criteria shown in other sections of the proposal.

RESPONSE: No change was made as a result of this comment. See response to above related comments.

COMMENT #20: MCE - Apps (3)(C). These provisions addressing NMP land application provisions should be removed from this rule section and integrated into the 6.300 rule. However, if the language is retained, the provisions shown are not adequate to address land application NMPs. There are many deficiencies in what should appear in applications as to NMP land application submittal contents that are outside of the present discussion about storage of animal waste. [to be addressed in the comments on the 6.300 rule.] Notably, (3)(C) does not require the application to identify locations of swales, concentrated flow lines, agricultural drains and field tile outlets.

RESPONSE: No change was made as a result of this comment. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The proposed rule in concert with 10 CSR 20-6.300 sufficiently characterizes what is needed in permit applications. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #21: MCE - Location (5)(A) Instead of saying that structures “shall be protected from inundation or damage due to the 100 year flood,” the provision should explicitly prohibit siting of structures and facilities handling animal waste within a 100 year flood plain or within a wetland. Nothing here prohibits construction of waste storage and other animal waste managing structures in Karst Topography. Nothing here ensures any setbacks at all for waste management facilities from drainage and agricultural ditches and concentrated flow lines leading to waters of the U.S.

RESPONSE: No change was made as a result of this comment. The proposed rule sufficiently explains and defines the required flood protection and setbacks to sensitive features. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #22: MCE - Location (5)(B) The question must be asked here as to whether the named setbacks to streams apply to agricultural drains and other man-made conveyances that lead to waters of the U.S.

RESPONSE: No change was made as a result of this comment. The rule clearly defines the prescribed setbacks. If a setback to a feature is not listed, then it is not included or required.

COMMENT #23: MCE - Sizing (6)(B)(4) This section again falls into an attempt to enact a rule with non-rule language for situations involving uncovered liquid waste management systems with less than 365 days of storage. The provisions say proposals “will be evaluated” without saying who will conduct such an evaluation, and for what purposes in relation to the permit issuance decision, with what minimum procedural and substantive standards for decision making. It is not clear what the decision-making consequences are of the exercise in carrying out what is to be “evaluated.” This section should be rewritten in clear rule form saying what the applicable requirements are and how MDNR will make the decision to allow such uncovered liquid animal waste storage structures.

RESPONSE: No change was made as a result of this comment. This is a design guide and as such the department will evaluate each application on a case by case basis. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #24: MCE - Sizing (6)(D) Excluded from this list is other process wastewater, such as silage leachate, egg cleaning water, compost pad leachate and runoff, off specification dairy product, etc. Provision (6)(D)(1)(F) mentions runoff from pervious and impervious areas due to average rainfall. BMPs should instead that clean, non-animal-waste-contact water should be diverted away from animal/waste/process contact areas. Facilities that take in large amounts of precipitation to be mixed with animal waste and other process wastewater or solid waste are not exercising appropriate BMPs that are required effluent limitations under EPA regulations. Provision (6)(D)(4)(A) makes no sense with the present draft’s articulation of the definition of “freeboard.”

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. The design of silage leachate collection systems along with other miscellaneous waste treatment systems was not a component of this rulemaking effort. The proposed rule does not allow clean stormwater to impact areas that are in containment, however areas that are exposed to precipitation and are within the manure containment area must be managed as process wastewater.

COMMENT #25: MCE - Concrete The present draft contains no requirements or standards on the physical engineering design of concrete and concrete/steel liquid animal waste structures, such as those frequently used below swine operations. There are no standards for concrete construction, for leak free techniques, for reinforced concrete construction, for corrosion/rust-resistant steel reinforcing wire, sealing, etc.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. The department does not review or provide approval to structural or mechanical components of a proposed waste or wastewater system. This would include the structural engineering plans for a building or foundation, electrical plans and the appropriateness or efficiency of mechanical pumps, motors and the like. This is the responsibility of the applicants consulting engineer. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #26: MCE - Geohydro (7)(A) The permit applicants, not MDNR, should be responsible for submitting the required geohydrological investigation to be performed by a qualified geologist, at the expense of the permit applicant. This provision does not identify what are the minimum elements of a site-specific geohydrological investigation, nor does it identify the rating scale and basis for evaluation of “severe” and what “collapse” potential items are considered, the extent of minimum site specific data necessary to support a decision of acceptability of the site and the required qualification and report elements required for those creating geohydrological investigation work product. Provisions at (7)(A)(2) do not provision sufficient procedural or substantive standards for agency decision making in considering liner and other requirements. There must be a clear rule text basis for the procedure and decision making concerning such matters that should be transparent. Where artificial impervious liners are required, there should be a rule basis for requirements on their installation and performance. The implication of the last sentence of (7)(A)(2) is that post construction testing is somehow not required in most situations. However, post-construction testing should always be considered essential and necessary to verify property construction technique and to ensure that liners and soils are meeting the required coefficient of permeability as a matter of meeting minimum performance requirements. The rule as drafted does not appear to guarantee that the criteria of maximum permeability is actually achieved in practical construction after its completion. Provisions should be added to requirements for geohydrological investigation that addresses potential effects on neighboring wells, groundwater transport away from the production area, protection of groundwater quality from CAFO wastewater transport beneath storage structures, identification of all nearby sole source aquifer [as defined by federal Safe Drinking Water Act.], identification of karst topography in the area of the production area, and all likely hydrological connections between animal waste and process wastewater storage facilities and surface waters of the U.S., including wetlands, that may occur.

RESPONSE: No change was made as a result of this comment. The portions referencing the geohydrological requirements are outside the scope of this rulemaking. These requirements are found in other department rules and guidance. In reference to the remaining comment, the department has determined that this design guide rule provides sufficient detail and information to provide the applicants design engineer a standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be



described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #27: MCE - Soils (7)(B)(2) The soils investigation here in these provision should provide recognized industry test methods or ASTM methods for all listed parameters. Saying that the coefficient of permeability (undisturbed and remolded) should determined should be clarified to indicate that ‘remolded’ determinations are really to be post-construction determinations. Nothing here specifies the number and spatial distribution of required soil test investigations. Nothing indicates a required spatial density of testing depending on the area or size or otherwise explains how many site specific soil determinations must be made or how to make such a decision.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #28: MCE - Basin (7)(C)(3) These provisions should specifically provide for the listed setbacks from groundwater to be 4 ft from the bottom of any compacted clay liner, rather than the floor of the basin. Construction of curtain drains around the waste storage structure may mean the allowing of a hydrological connection between wastewater percolating through the bottom of the liner and transport of such drainage to perimeter drains leading to surface waters, thus creating a regular discharge to waters of the U.S. It does not seem that MDNR has given any consideration to the issue of waste lagoon performance when a direct hydrological connection exists through trans-liner seepage to groundwater that is directly adjacent to surface waters of the U.S. or man-made conveyances (i.e. agricultural ditches) to such surface waters. Discharges to surface waters that occur through a direct hydrological connection from lagoon seep water must be considered under CWA regulatory jurisdiction.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #29: MCE - Slopes (7)(D) This provision is not written in suitable rule language to create a mandatory binding duty on the permit applicant/owner/operator. Phrases like “consideration should may given” are not enforceable and do not provide either procedural or substantive standards for making decisions.

RESPONSE: No change was made as a result of this comment. The department believes the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #30: MCE - Permeability (7)(G) These provisions should be amended to require post-construction field testing and verification of final waste storage lagoon bottom in-situ soils or the compacted clay liner to be less than  $1.0E-7$  cm/second for the coefficient of permeability, with a suggestion of one post construction test determination per every 0.25 acre of lagoon floor according to the published ASTM test method for coefficient of permeability.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #31: MCE - Seals (7)(G)(3) Instead of requiring “sealing” techniques of non-identified efficacy and performance, MDNR should instead require impermeable artificial liners over compacted clay as a state standard for such waste storage basins.

RESPONSE: No change was made as a result of this comment. The department believes the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #32: MCE - Permeability The provision at (7)(G)(3)(A) is vague and the second sentence does not make sense in the context of the regulation.. ‘....areas where potable water might become contaminated or when the wastewater contains industrial contributions of concern....’ is too vague of a concept to be enforceable since the draft does not define any of the criteria by which a decision on such “areas” would be made. Regulations written in this manner do not properly identify MDNR to be the decision maker when the text of the rule calls for a decision to be made. In addition, such poorly written regulations do not properly identify the criteria for making such decisions under the rule. In the absence of a properly written rule text, the draft text potentially encourage operators to make invalid and/or nondefeasible self-determinations with high potential impacts and commitment of natural resources. The rule must be amended to identify the final decision maker as MDNR as part of the permit issuance process and that it is the CAFO operator’s responsibility to submit an application and to comply with requirements for such CAFO operations. There must be clear standards of decision making. In order to protect both public health and public water resources, decisions on allowing high effluent practices must be publicly vetted proposals by the permit-authorizing authority, and decisions about which groundwater resources must be protected must be a transparent process involving final decision making by a permit authorizing authority. Finally, the public must be afforded a role for at least notice and comment about decisions affecting public water resources and the issuance of effluent permits for concentrated animal feeding operations. Finally, MDNR should publicly identify the regulatory basis and/or rationale for the two different rates cited [500 and 3500 gallons per acre per day]. Further, MDNR should identify how using these two rates would affect both a nominal case and a separate worst case situation of waste lagoon groundwater discharge through seepage and the potential impacts of such practices on neighboring groundwater and surface water resources. Assessing such impacts from agricultural wastewater must ensure that all relevant pollutants and potential pollutant transformation should be considered.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #33: MCE - Liners (7)(G)(3)(B) The liner thickness rule uses both the term “liner thickness” and “seal thickness” These terms should be explained/reconciled. The basis of the equation and/or the objective of its use should be explained and justified. Since soils for liners can be obtained on an economic basis in most locations from offsite sources if they are not available onsite, MDNR’s decision to allow liners with soils of permeability coefficients greater than  $1.0\text{E-}07$  cm/sec appears to condone non-exemplary siting and practices which may cause greater impacts to groundwater quality than what would occur from readily available means of achieving a  $1.0\text{E-}07$  cm/sec coefficient of permeability.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #34: MCE - Waste lagoon site Nothing anywhere in the regulation states that a site to be used for a waste lagoon must not be underlain with old agricultural drains/tiles which can lead to catastrophic failures and leaks of waste lagoon systems. All such tiling should be excavated from a site and such voids filled and re-compacted before final liner construction.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #35: MCE - Alt liners (7)(J) This provision on alternate liners is not effective and does not place any minimum floor or standard on what liners are used and what performance they achieve. The approaches mentioned have widely varying efficacy on controlling seepage.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #36: MCE - Perc losses (7)(K) There is no basis, rule or findings on when percolation tests are required and when they are not. MDNR is not identified as the decision maker as to percolation loss testing. Notwithstanding the Percolation loss testing provision, such a provision cannot be a substitute for engineering verification of the coefficient of permeability by post- construction required testing by an ASTM method. There is no clear basis or discussion of the relationship between the 1/16 inch seepage rate per day and the rates in different units shown in (7)(G)(3)(A). A rate of 1/16 acre-inch per day is 1697 gallons per acre per day. As a result, it is not clear why the 3000 gallon per acre per day rule should

be considered acceptable as presently shown at (7)(G)(3)(A). The barrel test combined evaporation/precipitation approach of the 10 barrel method is likely to understate evaporation during windy conditions if the liquid level in the barrel is shielded from incident wind impacts.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #37: MCE - Sludge (7)(M) The sludge accumulation provision is not written in a manner that is enforceable. The provision should require periodic operator inspection of waste lagoons to determine the thickness of the sludge layer. The CAFO operator should be required to remove such sludge accumulations when the sludge accumulation level exceeds the design basis used to justify sizing of the waste lagoon for purposes of determining the ability of the waste lagoon to contain a 5 year 24 hour storm or a chronic precipitation event.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #38: MCE - Tanks (8)(A) This rule should be amended to give a definition of a “pit.” There must be clarity that this section does not create another category of waste storage/management facilities that are earthen lined/bounded liquids enclosures. The requirement should provide a 4 ft margin from the bottom of tank structures to the seasonal high water table level; the way this is indicated here conflicts with the way application requirements are described for the 4 ft rule at (3)(A)(3)(E) That an applicant has installed perimeter foundation drains around a tank structure should not mean that the facility is exempted from the requirement to maintain the 4 foot margin to the water table elevation from the bottom of the facility liner. A perimeter drain installed 1 foot below the foundation floor may lower the water table, but it is not likely to lower such water table level by the amount of 4 foot. This particular subsection probably mixes discussion of perimeter drains with other types of drains in a manner not conducive to accurate description within the text of the rule.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #39: MCE - Headspace (8)(B) Use of floating roofs and plastic covers placed directly on the surface of liquid waste lagoons are a recognized method of reducing emissions of odors, ammonia and volatile organic compounds from waste storage facilities. The rule should not interfere with that engineering approach to gas management from liquid waste lagoon facilities.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #40: MCE - Drain (8)(D) The benefits of using of granular drain material as an engineering method for perimeter drain installation will be defeated unless the use of soil cloth for drain material boundaries to keep soil particles out of the drain material interstitial spaces is not also made a requirement. Provisions here do not explicitly say that the soils and foundation 11 review must be done prior to commencement of construction of the tank or pit and that such information should be part of a construction permit application.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #41: MCE - Concrete (9)(F) This provision is too vague to be enforceable. The concrete construction requirements of the rule should be explicitly stated with specific references to specific known and published standards which must guide all such concrete construction in Missouri. Concrete construction of waste storage facilities should feature preprepared and poured wall footings, reinforced wall and floor construction and impermeable keyed-in water tight sealing at the junctures of walls and floors to prevent leaks. Concrete construction standards should feature mandatory use of corrosion/rust-resistant coated steel reinforcement rods to address damaging effects of wastewater constituents on uncoated steel reinforcements. In construction of swine or dairy confinement buildings featuring slatted flooring and waste storage beneath such flooring, support pillars for such elevated slatted flooring should be placed over pre-poured supports under such pillars to avoid tank floor cracking from shear stresses.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #42: MCE - Construction (9)(A) The text of this provision should be recast to require diversion for precipitation run-on and run-off, rather than for “surface water” which can be mistakenly interpreted as waters of the United States. Nothing in this permit is authorizing the diversion of ambient stream surface waters. Instead, the draft should be amended to specifically cite the duty for clean water diversion shown at 40 CFR Sec. 122.42(e)(1)(iii).

RESPONSE: No change was made as a result of this comment. The department believes this section of the design guide rule provides sufficient detail and information.

COMMENT #43: MCE - Rain gage Nothing in the draft rules requires operation of a rain gage at CAFO production areas, including a requirement for the collection of daily precipitation records and the requirement to record weather conditions and precipitation in association with land application activities.

RESPONSE: No change was made as a result of this comment. The department believes the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #44: MCE - Construction (9) Subsection (9)(B) attempts to describe requirements in a single combined section that addresses all “Floors of Covered and Uncovered feedlots, poultry buildings and other solid manure storage areas. ” This section should be completely reorganized to focus on each of the physical elements as they are included as being included. Standards of addressing covered vs. uncovered structures should be completely separated because uncovered structures must address process wastewater containment arising from defined storm events. Uncovered structures will always require more specifically stated requirements to address waste containment.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #45: MCE - (9)( C)(3) The uncovered solid storage area requirements to “....have a runoff collection structure that meets the requirements of 10 CSR 20- 800....” is vague and indeterminate since no “runoff collection” physical elements or performance requirements are described in the rule text. The need for specific physical element and minimum environmental performance requirements covering solid waste storage is essential since operation of such waste management units as part of the production area cannot be allowed to cause a discharge of process wastewater except as a direct consequence of a storm event exceeding a 25 year, 24 hour storm event.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #46: MCE - Feedlots (9) What is demonstrably inadequate from this rule subsection are rule requirements for the management duties, physical elements and engineering design requirements and operational standards of how an uncovered, outdoor feedlot owner/operator shall ensure that the operating unit combination of an uncovered feedlot together with the /runoff control system does not cause any discharge to surface waters except during a storm event that exceeds the level of precipitation for the CAFO site for a 25 year 24-hour storm event. Also missing from this section are requirements for solid waste composting operations and mortality composting operations to avoid discharges from these production area facilities.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #47: MCE - Trackout nothing in the draft rule addresses trackout on vehicle tires of animal wastes and subsequent discharge of such wastes to stormwaters in violation of production area no discharge requirements. Control of trackout to keep animal waste from coming into contact with precipitation may require tire washing.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #48: MCE – Nothing in the draft rule addresses the requirement that CAFO waste entrained in spreader equipment pressure washing operation effluent must be collected for waste storage and not discharged to surface waters.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #49: MCE - Airborne deposition nothing in the draft rule recognizes that ammonia evaporative and fugitive dust emissions from CAFO production area site operations can lead to physical deposition of airborne CAFO wastes to local adjacent waterbodies and wetlands, and thus constitute a discharge of CAFO waste to surface waters of the U.S. The commentator is aware of at least one case of EPA enforcement in Region V against a turkey CAFO for discharge to surface waters from CAFO ventilation dust deposited in an adjacent agricultural drain. A recent EPA guidance document on CAFO

discharges cited an example of irrigation overspray being directed towards an agricultural drain and that such an operation constituted a discharge to surface waters of the U.S.

RESPONSE: No change was made as a result of this comment. This comment is outside the scope of this rulemaking.

COMMENT #50: MCE - Feedlots (9) The commentator raises the question of whether an ‘uncovered’ feedlot must be a structure in order to have applicability for the ‘floor’ requirements shown, or whether all exterior, uncovered feedlots are covered by ‘floor’ requirements.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #51: Temp Piles (10) This entire section is intended to create an unlawful exception from waste storage facility requirements to allow waste storage in the form of temporary stockpiles of CAFO solid wastes located in land application fields with plainly insufficient runoff control and virtual certainty of a discharge. Once a waste storage area has been established, it must be considered that it is part of a production area at a CAFO since waste storage is a necessarily a production area activity. MDNR cannot validly create an exception from requirements that a waste storage area have no discharge to surface waters except during a storm event exceeding a 25 year, 24 hour storm event. The proposed management measures outlined in section (10)(B) cannot ensure there will be no discharge to surface waters of the U.S. In addition, there is no possible interpretation that forming temporary storage piles in land application areas constitutes land application at an agronomic rate that ensures appropriate agriculture utilization of all nutrients in the waste. The subsection (10)(B)(4) provision is an implicit admission by MDNR that such temporary storage situations discharge to waters of the U.S. Because there are no monitoring, record-keeping and reporting requirements to address temporary stockpile process wastewater generation and discharge, this provision will have little or no protective effect in actual practice. The ‘protective measure’ provision of (10)(B)(1)(B) is neither specific, nor is it effective, and it certainly does not reflect a no discharge requirement. The separation distances provided for the location of stockpiles and other features that use separation distances similar to those provide for agronomic land application. However, the existence of a large uncovered stockpile of animal waste solids creates a much higher potential for precipitation induced discharge than mere agronomic waste application under ideal field conditions. As a result these should be justification for greater separation distance requirements for stockpiles than for land application from critical water and public features.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule.

COMMENT #52: MCE - Stream Cross (11) The provisions here address structures which are permanent stream crossings by CAFO waste conveyance piping. However, the physical practice of using temporary and mobile irrigation piping across streams in association with irrigation of waste effluents is not



addressed in the draft rule text and presents the greater risks of accidents and spills because of common industry practice. Such irrigation operations should be subject to operational standards, operator training, operator tending and maintenance requirements.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #53: MCE - Monitoring (13) This provision does not require specific elements of the case-by-case determination that must be made and the natural resource protection basis of criteria for requiring groundwater monitoring. For example, there is no citation to the need to protect existing high quality uses of groundwater, to protect groundwater with an immediate hydrological path to surface water, or to otherwise protect against rapid percolation of CAFO process wastewater to groundwater in Karst topography, etc. in relation to groundwater monitoring requirements near CAFO waste storage lagoons. The rule needs to quantify the threshold criteria and physical elements that would be present that mitigate for groundwater monitoring requirements for both production areas and land application areas. One such condition might be the present condition of excessive ammonia, nitrates and/or pathogens already known to be present in area groundwater. The rule is written to require hydrogeological investigation only after a case-by-case decision is made citing the listed factors [presently with no quantitative threshold basis]. This properly raises the question of what level and specificity of hydrogeological investigation is necessary is properly necessary to support the initial case-by-case finding called for by the rule. This should be a required application content item, but it does not appear the proposal is written in such a manner.

RESPONSE: No change was made as a result of this comment. The department believes this design guide rule provides sufficient detail and information to provide the applicants design engineer an appropriate standard to base design decisions and engineering certification on. The department requires all design documents and construction applications be sealed by a Missouri licensed Professional Engineer. It is not reasonable or practical to expect that all aspects of a design and application will be described or characterized in this rule. The department has determined that the level of documentation required in 8.300 is appropriate to effectively provide the necessary level of regulatory review for CAFOs in Missouri.

COMMENT #54: Hoehne -Definitions. (B) 2. Freeboard – The elevation difference between the bottom of the spillway to the lowest point on the top of the berm for an earthen manure storage basin.

RESPONSE: No change was made as a result of this comment. The department agrees the elevation must be at the lowest point of the top of berm, however, the department determined this additional detail is not necessary to add to rule.

## **10 CSR 20-8.300 Concentrated Animal Feeding Operations**

PURPOSE: This rule sets forth criteria prepared as a guide for the design of manure management systems at concentrated animal feeding operations. This rule shall be used together with 10 CSR 20-6.300 Concentrated Animal Feeding Operations. This rule reflects the minimum requirements of the Missouri

Clean Water Commission in regard to adequacy of design, submission of plans, and approval of plans. It is not reasonable or practical to include all aspects of design in this standard. The design engineer should obtain appropriate reference materials which include but are not limited to: copies of ASTM International standards, design manuals such as Water Environment Federation's Manuals of Practice, and other design manuals containing principles of accepted engineering practice. Deviation from these minimum requirements will be allowed where sufficient documentation is presented to justify the deviation.

(2)(A) Applicability. This rule shall apply to new or expanding concentrated animal feeding operations (CAFOs) that commence construction on or after April 30, 2012.

(2)(E) Deviations. Deviations from these rules may be approved by the department when engineering justification satisfactory to the department is provided. Justification must substantially demonstrate in writing and through calculations that a variation(s) from the design rules will result in either at least equivalent or improved effectiveness. Deviations are subject to case-by case review with individual project consideration.